Subjects taught to third-stage students in the Department of Chemistry

1- Acids: their definition, origin, aliphatic acids

2- Phenols, aromatic carboxylic acids

3- Bases: definition, aliphatic bases

4- Aromatic bases, heterocyclic bases

5- Carbocation: methods of its formation, structure, and stability

6- Carbocation reactions with examples

7- Types of arrangements of the carbocation

8- Rearrangement into N and O atoms deficient electrons

9-Carboanion reactions: addition reactions and their mechanisms

10- Displacement reactions and their mechanisms

11- Nucleophilic substitution on a saturated carbon atom: mechanisms of S_N1 and S_N2 substitution

12- The effect of neighboring groups on substitution reactions with examples and their mechanisms Applications and examples of S_N1, S_N2 and S_Ni substitution mechanisms

13- The effect of neighboring groups on substitution reactions with examples and their mechanisms

14- Orientation in elimination reactions and the effect of active groups on elimination

15- Pentacyclic heterocyclic compounds: types, names, and methods of preparation

16- Reactions of pentacyclic heterocyclic compounds

17- Hexacyclic heterocyclic compounds: types, names, and methods of preparation

18- Reactions of hexacyclic heterocyclic compounds

19-Fusedcyclic compounds: types, names, preparation methods, and reactions

20- Polycyclic aromatic compounds: naphthalene and its derivatives, their preparation and reactions

21-Anthracene, phenanthrene and their derivatives, preparation and reactions

22- Free radicals: their definition, structure, stability, and methods of formation,

free radical reactions